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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,017	09/15/2005	Baek-Kyun Jeon	8071-155T	6430

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EXAMINER

BRIGGS, NATHANAEL R

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/523,017	Applicant(s) JEON ET AL.	
	Examiner Nathanael Briggs	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/2/2005; 5/30/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Bouten (US 6,816,226).
4. Regarding claim 1, Bouten discloses an LCD panel (see figures 1 and 4, for instance) having an insulating substrate (22) with a display area (1); and a plurality of spacers (28, 29, 30, 31) formed on the insulating substrate (22), wherein contact area of the spacers (28, 29, 30, 31) contacting the substrate (22) becomes large as the spacers (28, 29, 30, 31) are located closer to a center of the display area (1). Claim 1 is therefore unpatentable.
5. Regarding claim 2, Bouten discloses the LCD panel of claim 1 (see figures 1 and 4, for instance), wherein the contact area of the spacers (28, 29) at the center of the display area (1) appears from Figure 4 to be equal to or less than 3.2 times the contact

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area of the spacers (30, 31) closest to edges of the display area (1). Claim 2 is therefore unpatentable.

6. Regarding claim 3, Bouten discloses the panel of claim 2 (see figures 1 and 4, for instance) further having a gate wire (column 3, line 43) and a data wire (column 3, line 43) formed on the insulating substrate (22) and transmitting electrical signals such as a scanning signal and a picture signal, a thin film transistor (column 3, line 42) electrically connected to the gate wire (column 3, line 43) and the data wire (column 3, line 43) and serving as a switching element for controlling the picture signal, and a pixel electrode (column 3, line 51) receiving a pixel voltage for drive liquid crystal molecules (20). Claim 3 is therefore unpatentable.

7. Regarding claim 4, Bouten discloses the panel of claim 2 (see figures 1 and 4, for instance), further comprising red, green and blue color filters (column 3, lines 60-61) formed on the insulating substrate (22; column 3, lines 60-62). Claim 4 is therefore unpatentable.

8. Regarding claim 5, Bouten discloses an LCD (see figures 1 and 4, for instance) having two substrates (21, 22) facing each other and having a display area (1); a sealant (3) formed along a periphery of the substrates (21, 22) located external to the display area (1), having a shape of a closed loop, and supporting the substrates (21, 22); a liquid crystal layer filled in a room enclosed by the substrates and the sealant; and a plurality of spacers (28-31) formed between the substrates (21, 22) and contacting the substrates (21, 22) with different contact areas to support the substrates (21, 22). Claim 5 is therefore unpatentable.

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9. Regarding claim 6, Bouten discloses the LCD of claim 5 (see figures 1 and 4, for instance), wherein contact area of the spacers (28-31) contacting the substrate (22) becomes large as the spacers (28, 29) are located closer to a center of the display area (1). Claim 6 is therefore unpatentable.

10. Regarding claim 7, Bouten discloses the LCD of claim 6 (see figures 1 and 4, for instance), wherein the contact area of the spacers (28, 29) at the center of the display area (1) appears from Figure 4 to be equal to or less than 3.2 times the contact area of the spacers (30, 31) closest to edges of the display area (1). Claim 7 is therefore unpatentable.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouten (US 6,816,226) in view of Lee et al. (US 2003/0147038).

13. Regarding claim 8, Bouten discloses a method of manufacturing an LCD (see figures 1 and 4, for instance), the method having steps of forming a plurality of spacers (28-31) on one of two substrates (21, 22) having display areas (1), the spacers (28-31) located on the display area (1) of the one of two substrates (21, 22) and contacting the substrate (21, 22) with different contact areas to supporting the substrate (21, 22); applying a sealant (3) on one of the substrates (21, 22); and dropping a liquid crystal

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material (20) on the substrate (21, 22) applied with the sealant (3). However, Bouten does not specifically disclose a step of combining the substrates under a vacuum atmosphere.

14. Regarding claim 8, Lee discloses a method for manufacturing an LCD (see figures 1-8, for instance) including a step of combining the substrates under a vacuum atmosphere ([0045]).

15. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the vacuum process of Lee in the method of manufacturing of Bouten. The motivation for doing so would have been to alleviate the disadvantages of the prior art cited by Lee, which includes eliminating airflow between the substrates, thereby strengthening the bond between the substrates, as taught by Lee ([0012], [0013]). Claim 8 is therefore unpatentable.

16. Regarding claim 9, Bouten in view of Lee discloses the method of claim 8 (see Bouten figures 1 and 4; Lee figures 1-8, for instance), and Bouten further discloses wherein contact area of the spacers (28-31) contacting the substrate (22) becomes large as the spacers (28, 29) are located closer to a center of the display area (1). Claim 9 is therefore unpatentable.

17. Regarding claim 10, Bouten in view of Lee discloses the method of claim 9 (see Bouten figures 1 and 4; Lee figures 1-8, for instance), and Lee further discloses steps of bonding the substrates including aligning the substrates ([0038]); evacuating a room between the substrates ([0045]); adhering the substrates using vacuum atmosphere ([0041]-[0043]); pressurizing the substrates using atmospheric pressure ([0045]).

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Bouten further discloses steps of attaching the substrates with the sealant (column 3, lines 28-30); and combining the substrates by hardening the sealant (column 4, lines 61-64).

18. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the substrate-bonding process of Lee in the method of manufacturing of Bouten. The motivation for doing so would have been to achieve quick and accurate alignment of the substrates for manufacture, as taught by Lee ([0038]). Claim 10 is therefore unpatentable.

19. Regarding claim 11, Bouten in view of Lee discloses the method of claim 10 (see Bouten figures 1 and 4; Lee figures 1-8, for instance), wherein the contact area of the spacers (28, 29) at the center of the display area (1) appears from Figure 4 to be equal to or less than 3.2 times the contact area of the spacers (30, 31) closest to edges of the display area (1) when combining the substrates (21, 22). Claim 11 is therefore unpatentable.

Conclusion

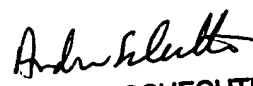
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathanael Briggs whose telephone number is (571) 272-8992. The examiner can normally be reached on 8:30 AM to 5:00 PM (EST) Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nathanael Briggs
9/27/06


ANDREW SCHECHTER
PRIMARY EXAMINER